

## PATENT ABSTRACTS OF JAPAN

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## (54) OPTICAL WAVEGUIDE DEVICE

## (57)Abstract:

**PURPOSE:** To enhance the propagation efficiency of light in a waveguide and the coupling efficiency of a light source with the optical waveguide by forming the distribution in electric field intensity in the depth direction of a substrate by a propagation mode in an incident end part where a beam from the light source is made incident on deeper than other part.

**CONSTITUTION:** This device is provided with the optical waveguide 1 propagating the beam in the electric field direction perpendicular to the main surface of the substrate 3, and is constituted so that the distribution 4, 5 in electric field intensity in the depth direction of the substrate 3 by the propagation mode of the optical waveguide 1 are formed deeper than other part in the incident end part where the beam from the light source is made incident on. Thus, the shape of the distribution 4, 5 in electric field intensity of a waveguide mode in the end surface of the optical waveguide 1 is brought close to the shape of the distribution 4, 5 in electric field intensity in the light emitting point of the light source, and the superposition integration of the distribution 4, 5 in electric field intensity of an incident beam in the incident end surface of the optical waveguide 1 with the distribution 4, 5 in electric field intensity of the waveguide mode propagating in the optical waveguide 1 is enhanced. Thus, the propagation efficiency of light in the waveguide 1 and the coupling efficiency of the light source with the optical waveguide 1 are enhanced.

